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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,728	10/08/2003	Robbie Thielemans	920522-94808	6705
23644	7590	03/10/2006	EXAMINER	
BARNES & THORNBURG, LLP			HODGES, MATTHEW P	
P.O. BOX 2786			ART UNIT	
CHICAGO, IL 60690-2786			PAPER NUMBER	
			2879	

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/681,728

Applicant(s)

THIELEMANS ET AL.

Examiner

Matt P. Hodges

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 8, 9, 12, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Oishi et al. (US 2001/0005308 A1).

Regarding claims 1-3, Oishi discloses (see figures 1 and 2) a display device including a substrate having an array of addressable light emitting devices, an input means, drive circuitry (12), electrical connections, and cooling channels (13A1). Drive circuitry is electrically connected to the light emitting devices by way of grounding post (13A) and ribbon cable (not shown). (Paragraphs 0028, 0030, and 0031). The cooling channel (13A1) is open at a top and bottom ends of the substrate and is therefore sealed with respect to the light emitting devices and the drive circuitry.

Regarding claims 4 and 5, heat sinks (13B) are arranged adjacent the cooling channels and formed on the rear side of the array of light emitting devices. (See figure 1).

Regarding claims 8 and 9, the plasma display panel is necessarily sealed to trap the fill gas. Further that encapsulation (front substrate and sealing adhesives) are transparent.

Regarding claim 12, the cooling channels are filled with a gas cooling fluid.

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Regarding claim 13, Oishi further discloses the use of fans for fluid propulsion.
(Paragraph 0038).

Claims 1-12, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Himeno et al. (US 5,390,093).

Regarding claims 1-3, 6, and 7, Himeno discloses (see figures 1 and 3) a display device including a substrate (5) having an array of addressable LEDs (9), an input means, drive circuitry, electrical connections (16), and cooling channels. (Column 4 lines 20-35). The cooling channel is formed between the frame (4), front substrate (5) and rear substrate (17). It is sealed with respect to the front and rear substrates but is vented to the atmosphere thus providing an air channel. (Column 4 lines 20-25).

Regarding claims 4 and 5, The front substrate is further defined to contain LED elements, which each contain their own substrate, connected to a heat dissipating substrate (5) that radiates heat into the cooling channel.

Regarding claims 8 and 9, LEDs are each individually packaged and sealed. The encapsulant is formed on the light emitting side of the device and is therefor transparent.

Regarding claim 10, the heat sink plate (5) further includes holes (11) through which the leads of the LEDs pass.

Regarding claim 11, the heat sink is composed of aluminum and thus is conductive. Therefore some insulation is provided between the heat sink and the leads of the LEDs in order for the device to operate. (That insulation might be an air gap or a dielectric material).

Regarding claim 12, the cooling channels are filled with a gas cooling fluid.

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Regarding claim 14, the display device is a tiled display including heat sink plates (5) connected to a base structure. (See figure 2).

Regarding claim 15, the cooling channels are each independent and exit the rear of the display panel between each tiled display element. (Column 4 lines 20-25).

Allowable Subject Matter

Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 16, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 16, and specifically comprising the limitation of a tiled display including a cooling channel between the display substrate and the driving circuit, with electrical connections between the two, and further the cooling channel being connected together with neighboring tile's cooling channels to form a cooling circuit.

Conclusion

As the previous rejections were withdrawn, this action is made non-final.

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Response to Arguments

Applicant's arguments, see request for reconsideration, filed 12/12/2005, with respect to the rejection(s) of claim(s) 1-16 under 35 U.S.C. 102(b) and 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the references cited above.

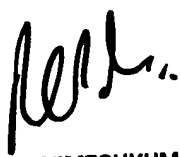
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matt P Hodges whose telephone number is (571) 272-2454. The examiner can normally be reached on 7:30 AM to 4:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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